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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,341	12/09/2003	Brian Allan Floyd	YOR920030585US1	3541

7590 06/01/2006
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EXAMINER

NGUYEN, KHANH V

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/731,341

Applicant(s)

FLOYD, BRIAN ALLAN

Examiner

Khanh V. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-16 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-16 and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Objections

Claim 11 is objected to because of the following informalities: "second stage" should correctly be -- **second amplifying stage** --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, "series transmission line and shunt stub", the specification lacks description. Note, the specification simply called "shunt-stub transmission line".

Regarding claim 11, it is not clear how "a current" associated with the second stage is "adjustable".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6-16, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang et al. (IEEE, "A 1.2 V, 1.8 GHz CMOS two-stage LNA with common-gate amplifier as an input stage", published on 21-24 Oct, 2003) hereafter called PUBLICATION in view of Aparin et al. (6,166,599).

Regarding claims 1, 20, the differences between PUBLICATION (Fig. 4) and claimed invention are PUBLICATION utilizes common-gate transistor (FET) and a matching circuit comprising a series transmission line and a shunt-stub. Publication (Figs. 4, 6) discloses a common-gate input transistor (Mg) can be read as a first amplifying stage, wherein it is well known in the art that bipolar transistor and field effect transistor (FET) can be used interchangeably and replacing one for another would have been obvious to a person having ordinary skill in the art; transistors (M1, M2) can be read as a second stage cascode transistor pair; and input, output and inter-stage matching networks.

Aspirin et al. (Fig. 4) disclose an input stage matching circuit comprising series transmission line (ML2) and transmission line (ML1) which can be read as a shunt-stub.

PUBLICATION and Aspirin et al. are analogous art because they are from the same field of endeavor, namely LNA having matching networks. Accordingly, it would have been obvious in view of the reference, taken as a whole, to have modified the circuit of PUBLICATION to have included an input matching network, as taught by Aspirin et al. Such a modification is merely replacing one matching circuit for another and would have been obvious to a person having ordinary skill in the art, since the main

purpose of a matching circuit is providing matching between stages, thereby suggesting the obviousness of such a modification.

Regarding claim 2, PUBLICATION, wherein block coupled to the source of transistor (Mg) can be read as an input matching network.

Regarding claim 3, PUBLICATION, wherein components connected between the drain of transistor (Mg) and the gate of transistor (M1) can be read as an inter-stage matching network.

Regarding claim 4, PUBLICATION, wherein components connected between the drain of transistor (M2) and the output (RFout) can be read as an output matching network.

Regarding claims 6-9, wherein amplifier of the PUBLICATION is a low noise amplifier (LNA); LNA as well known in the art is often implemented using compound semiconductor technologies which can be one of the technologies claimed, due to noise and frequency consideration; wherein millimeter-wave communication receiver as well known in the art typically includes a LNA.

Regarding claim 10, wherein LNA of the PUBLICATION is a unilateral amplifier since the signal is flowing from input to output. Note, applicant stated "amplifier can be either LNA and/may be a unilateral amplifier", since PUBLICATION implemented LNA, there is no reason why it cannot be a unilateral amplifier.

Regarding claim 11, wherein current associated with the second stage cascode transistor pair can be changed/adjustable by vary component value in the stage.

Regarding claims 12, 13, 18 please see Rejected claims 1, 6-9 combined.

Regarding claim 14, PUBLICATION, wherein block coupled to the source of transistor (Mg) can be read as an input matching network.

Regarding claim 15, PUBLICATION, wherein components connected between the drain of transistor (Mg) and the gate of transistor (M1) can be read as an inter-stage matching network.

Regarding claim 16, PUBLICATION, wherein components connected between the drain of transistor (M2) and the output (RFout) can be read as an output matching network.

Regarding claim 19, please see Rejected claims 1, 6-9 combined.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh V. Nguyen whose telephone number is (571) 272-1767. The examiner can normally be reached from 8:00 AM - 3:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



KHANH VAN NGUYEN
PRIMARY EXAMINER
Art Unit: 2817